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ABSTRACT

Intended to provide background information to state leaders as they play an increasingly visible role in reading programs, this policy brief notes that too many students are not reading at grade level and apparently are not receiving adequate opportunities to catch up to their peers. The brief is in 7 sections. The first is "How Well Are Students Reading?" The second section, "How Do Children Learn To Read?" outlines steps in the learning process, and complications. The third section, "What Do We Know About Effective Reading Approaches?" makes the point that no approach alone works best for all children under all conditions. The fourth section, "Why Aren't More Students Reading Successfully?" discusses lack of prevention, diagnosis, and intervention related to reading problems; and inadequate teacher preparation and professional development. The fifth section, "What Can Policymakers Do To Improve Reading Results?" outlines current state activities regarding 5 questions, and offers additional recommendations for each. A short summary follows, and the final section describes 6 resources and studies on reading. (SR)

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Reading: What Policymakers Need to Know

Learning to read is an essential foundation for success in school, employment and life. And in today's world of complex and ever-changing technology and communication, it is even tougher to succeed without strong reading skills. Educators and reading experts argue that students who cannot read at grade level by the end of 3rd grade have difficulties throughout school, perform poorly in other subjects and may never graduate. Further, the alternatives to reading achievement - grade retention, special education assignment and long-term remedial programs - are costly and typically less effective for students.

On the hopeful side, the knowledge and practices exist to teach all but a small percentage of students to read at or above grade level. Unfortunately, what is known about teaching students to read and preventing and or correcting reading problems is not disseminated to or used in all schools across the country. While not the sole reason, some experts believe that the intense debate between phonics and whole-language supporters has interfered with teachers' access to clear, helpful and adequate information about reading approaches and programs.

This policy brief is intended to provide background information to state leaders on the following issues as they play an increasingly visible role in reading programs:
*Understanding how children learn to read
*Clarifying what research says about effective reading approaches
*Understanding why so many students aren't reading successfully
*Identifying what policymakers can do to help increase student reading performance.

HOW WELL ARE STUDENTS READING?

Too many students are not reading at grade level and apparently are not receiving adequate opportunities to catch up to their peers. The latest reading scores do not bode well for many students if they are to meet high academic standards and participate in a more demanding workforce. The 1994 National Assessment of Educational Progress (NAEP) Reading Assessment revealed that only 40% percent of 4th graders, 30% percent of 8th graders and 30% of 12th graders are reading at the Proficient level (based on Basic, Proficient and Advanced levels).

Significant differences persist among racial groups in the number of students attaining reading proficiency, illustrated by the following percentages (averaged for each of the three grades): Asian, 38%; black, 9%; Hispanic, 14%; and white, 35%. Another major gap exists between urban and nonurban students, with only 43% of urban 4th graders reading at the Basic level or higher compared to 63% in nonurban districts. The NAEP results also show that many students spend little time reading, despite research findings that indicate "time-on-task" affects achievement.

HOW DO CHILDREN LEARN TO READ?

According to one leading researcher, Reid Lyon of the National Institute of Child Health and Human Development, reading is a learned skill involving four general, distinct steps:
*Developing phonological awareness (understanding that sounds heard in spoken words correspond to letters seen in print)
*Linking sounds with specific letters
*Becoming a faster reader by automatically associating symbols and sounds
*Concentrating on the meaning of words.

For example, when a child sees the word "cat," the brain recognizes the word's sounds or phonemes ("kuh-aah-tuh"). The reader then links the sounds to letters (C-A-T) and identifies the word, lastly the brain applies meaning to "cat" using vocabulary, intelligence and reasoning.

Breakdowns anywhere in the process can signal and lead to reading problems. Many students with reading difficulties have auditory problems that prevent them from properly hearing or distinguishing sounds. These disabilities make certain reading methods that rely on sound letter relationships, such as phonics, less effective for

some students.

Brain research offers new insights for understanding and addressing reading problems. According to some researchers, as many as 20% of schoolchildren have mild to severe neurological disorders that make it hard for them to read. Neuroscientists now believe that many reading problems are related to the brain's inability to process what it hears and distinguish between subtle sounds, rather than incorrectly *seeing* words and letters. Further, they have discovered that people who cannot sound out words seem to have a lighter blood flow to the brain's language regions. While the reasons for this phenomenon are unclear, the initial findings might lead to better diagnosis of and intervention with reading problems.

WHAT DO WE KNOW ABOUT EFFECTIVE READING APPROACHES?

When it comes to "what works," the greatest agreement seems to be that no approach alone works best for all children under all conditions, nor will one particular method reverse the troublesome NAEP scores.

Marie Carbo, executive director of the National Reading Styles Institute, contends that the way to build and improve reading skills is to use a variety of strategies that recognize students have different strengths, weaknesses and reading styles. The more strategies teachers have at hand, the more they are able to switch gears and adapt their approach to the student's needs, and the more likely children will learn to read well.

Despite the debate over phonics vs. whole-language, there seems to be some general agreement about the basic reading skills that students should acquire during the primary grades, including the following:

*Phonemic awareness (understanding that sounds heard in spoken words correspond to letters seen in print)
*Common sound-spelling relationships in words
*Decoding strategies (reading words by sounding out their parts and blending them together)
*Vocabulary development and building
*Comprehension strategies (understanding the meaning of reading materials).

During 2nd grade and beyond, the focus should change slightly to help students develop reading strategies that strengthen their comprehension and retention skills and expand their vocabulary through a wide variety of reading materials (including narrative and factual pieces that expose them to science, history, geography and other content areas).

Over the years, research and practical experience have yielded a "what's-needed" list to increase students' chances of mastering reading. This list includes, but is not limited to, the following:

*Provide diagnostic and intervention services as early as possible.
*Use a variety of reading strategies and materials to meet individual student needs, expand vocabulary and strengthen comprehension.
*Provide high-quality preservice and professional development so teachers have sufficient knowledge and practical skills to teach reading to any student (especially those at risk), and can integrate the most appropriate practices into their classroom.
*Keep groups or classes as small as possible through innovative staffing, for example, by using other certified building staff, teachers aides and tutors.
*Set reading achievement as a top priority and devote as much time as possible to reading in the early grades.
*Involve parents in developing their children's readiness, ability and desire to become good readers.

The Debate Over Phonics and Whole-Language

Disappointing NAEP and statewide assessment reading scores have sparked a heated debate between phonics-based and whole-language supporters. The pendulum is swinging back to phonics after whole-language dominated during the 1980s and '90s. Evidence is emerging, however, that supports a balanced approach, incorporating the best attributes of phonics and whole-language.

Phonics focuses on letter-sound relationships and the combination of different letter sounds. This method teaches children to dissect unfamiliar words into parts and then blend isolated sounds together to make a recognizable word. Phonics, however, is not synonymous with phonemic awareness, and not all phonics programs incorporate this skill development.

Whole language is based on the belief that children learn to read like they learn to talk - by absorbing and imitating the language around them. The whole-language philosophy emphasizes reading for meaning and using literature rather than rules as a teaching tool.

Both approaches have their strengths and weaknesses. For example, phonics is credited with giving children better word pronunciation and word recognition, but can fall short on developing comprehension and vocabulary. Since phonics slices words into small pieces, some students have a difficult time understanding the broader meaning of the text. Whole language incorporates and stresses the rhythm of words and the meaning of text, but might leave some children struggling to sound out words unfamiliar to them.

Researchers at the National Institutes for Health (NIH) have studied the way children learn using pure phonics, pure whole-language and combinations of both. Their conclusion is that children learn to read best if they are first given "phoneme-awareness" training in the sounds of the English language and then taught the letter-sound relationships of traditional phonics. All along, teachers should expose children to literature by reading to them and giving them interesting books as in the whole-language method. Other reading experts emphasize the importance of allowing quick learners to move ahead as they grasp the basics of phonics to more literature-based reading.

As more researchers and teachers support a balanced approach, some states are following suit. Further, experts and educators are urging lawmakers to focus less on mandating a particular reading method and more on ensuring that elementary teachers are prepared to choose among several approaches to help all children learn to read.

WHY AREN'T MORE STUDENTS READING SUCCESSFULLY?

Despite differing opinions on the most appropriate ways to teach reading, a fairly extensive research base exists on how children learn to read. If so much is known, why aren't more students reading at grade level? Several reasons have been suggested, including a lack of prevention, diagnosis and intervention related to reading problems; inadequate teacher preparation and professional development; and the absence of reading standards and accountability.

Prevention, Diagnosis and Intervention

Most reading problems are preventable, and nearly every child can learn to read successfully. Some students enter 1st grade more advantaged because of early childhood education and what they are exposed to at home. However, gaps between these and other children can be narrowed through appropriate instruction, proper diagnosis of reading skills, regular assessment of reading progress and, if necessary, intervention efforts.

According to the Center for Special Education Finance, the United States spends approximately $8 billion a year on special education services, most of which are related to language disabilities, including reading, writing and spelling. States and districts could cut special education costs and boost reading skills through better prevention programs, such as increasing the number of students - especially low-income - who receive high-quality prekindergarten and kindergarten services. These programs can improve children's cognitive and language skills, introduce them to the alphabet and letter sounds, expand their vocabulary and increase their knowledge about how the world works - all of which are important in learning to read. Neuroscientists even suggest that prevention services should begin with 0-3- year-olds and their parents, an issue which is catching the attention of an increasing number of state policymakers.

If children do develop difficulties with reading, then early, accurate diagnosis and appropriate intervention strategies are essential. One problem is that many teachers do not - or do not know how to - diagnose and correct reading problems soon enough, which, according to many educators and experts, should happen in 1st grade or before. Many schools wait until 3rd grade to identify children for remedial classes, which is more expensive and less effective than intervening earlier. NIH research indicates 74% of children diagnosed with reading disabilities in 3rd grade still have reading difficulties in 9th grade.

While most children learn to read by the end of 1st grade through regular classroom instruction, many need additional assistance. One-on-one tutoring has shown to be a more effective and, in the long run, a less expensive intervention than Title I and special education services. Some districts and schools, however, are using Title I dollars for more effective one-on-one or small-group tutoring programs, professional development and smaller classes. Studies of the "Success for All" reading program show intensive instruction in the early grades can cut

special education enrollment by half to three-quarters, services which usually add $2,000 to $4,000 per pupil.

While some studies conclude that certified teachers are the best option for tutoring, well-trained and supervised paraprofessionals and volunteers can be valuable resources. Some experts, such as Barbara A. Wasik with the Center for Research on the Education of Students Placed At Risk, argue more research is needed if the potential of volunteer tutoring is to be realized. But if volunteers are used, Wasik believes it is necessary to have a designated coordinator and knowledgeable trainer, consistent training, frequent tutoring sessions, and coordination between tutoring approaches and classroom instruction.

Teacher Preparation and Professional Development
Some experts contend inadequate teacher preparation and professional development is a central reason so many students are failing to read at grade level. Despite existing knowledge about how children learn to read and appropriate reading instruction, many teacher candidates do not have the depth and breadth of training needed to ensure they can teach all students to read. Typically, prospective elementary teachers take a maximum of two or three reading courses, and some alternative route teachers might not receive any formal training. Not only is the number of courses inadequate, but quite often the content is as well.

State policy changes can enhance teachers' knowledge and skills through revised course content and graduation requirements for teacher education programs, tougher accreditation standards for institutions, stiffer licensing rules for elementary teachers and higher quality professional development.

Reading Standards and Accountability
Unlike many other disciplines, standards for students and teachers related to reading have not been clearly defined. Some experts and teachers believe standards have not been developed because of debates and disagreements over how best to teach reading and how to interpret research findings about reading development and programs. Nonetheless, reading standards could provide guidelines for teachers about what students should know and when, greater accountability for students to perform at grade level and more consistency across classrooms for what is taught and learned.

WHAT CAN POLICYMAKERS DO TO IMPROVE READING RESULTS?

The following section includes *policy questions* related to reading performance, *current state activity* aimed at increasing reading achievement and *recommendations* put forth by reading experts, educators and researchers to improve student reading skills. Some recommendations reinforce existing state policies, while others suggest additional or alternative options.

How can states help prevent and turn around student reading problems?

Current State Activities	Additional Recommendations
*Providing grants for or requiring districts to provide intervention and remedial services, especially to at-risk students *Requiring summer school, extended day or tutoring programs for students who fail to meet designated achievement levels before 3rd grade *Requiring or encouraging districts to diagnose reading readiness, skills and progress *Identifying students at risk of reading failure before they enter 2nd grade.	*Provide supplemental or full funding for at-risk children to attend preschool or other early childhood programs *Provide information and partial funding to districts for appropriate diagnosis of reading skills as children enter 1st grade, followed by immediate intervention if necessary and regular assessment of student progress *Provide information about and encourage districts to use various reading instruction methods *Encourage districts to adopt reading programs and prevention services that increase parents' involvement in teaching their children to read.

How can states help districts and schools choose appropriate reading programs and approaches?

Current State Activities	Additional Recommendations
*Identifying, providing funding for and or	*Sponsor studies and or increase funding to identify programs

encouraging districts to implement reading programs research has proved effective.	that improve reading skills, including under which conditions and for which students *Require or encourage districts to evaluate reading programs, report results on a regular basis and coordinate these results with instruction and teaching methods *Provide grants to implement research-based reading programs and require recipients to evaluate and report results *Establish a state information center to share information about various reading programs; student assessments that are accurate, cost-efficient and "time efficient"; and effective uses of technology for reading instruction and assessment.

Should states mandate or promote particular reading approaches or programs?

Current State Activities	Additional Recommendations
*Encouraging or requiring schools to use phonics instruction *Requiring or encouraging districts to use a balanced approach to reading instruction -- phonics and whole-language *Providing funds and or training for particular reading programs (i.e., Reading Recovery).	*Promote use of several appropriate reading approaches and programs to meet all students' needs *Ensure all teachers can assess students' abilities and adapt instructional methods to meet student needs *Disseminate information on how reading programs match various students' needs.

What state policies could provide teachers with the skills and knowledge they need to help all students read successfully?

Current State Activities	Additional Recommendations
*Requiring professional development plans or providing funds to improve elementary teachers' ability to teach reading (some initiatives focus on phonics) *Requiring teachers to pass reading instruction competency tests before receiving certification *Increasing number and quality of reading courses in teacher education programs and those required for certification.	*Strengthen certification requirements and competency tests for elementary teachers *Increase quality and quantity of reading courses in teacher education programs and match to state or district academic standards *Provide grants for teacher staff development and require grant recipients to evaluate results.

How does reading achievement fit with other state policies to improve student performance?

Current State Activities	Additional Recommendations
*Mandating that districts set kindergarten reading readiness goals, reading standards for the primary grades and or for grades 4-8 *Requiring districts to report student reading progress and number of students falling behind *Retaining students not reading at grade level by 3rd grade and/or requiring their participation in summer reading programs *Requiring individual student or school improvement plans for raising reading achievement levels.	*Develop reading standards for students in the early grades, accompanied by assessments and accountability for reaching standards *Monitor textbook adoption to ensure materials support research on effective reading practices, state academic standards and district learning goals *Promote importance of reading competency throughout the state.

Below are a few examples of state policies related to reading:

Arkansas: An Early Literacy Program initiated in 1993 for grades K-3 combines early intervention, one-on-one tutoring, small-group reading instruction and extensive teacher training. Reading Recovery is used in more than 20% of schools and is supported by funds from foundations and the legislature. Prevention and parent-support

groups such as Home Instruction Program for Preschool Youngsters focuses on getting children ready to learn and read.

Colorado: In 1996, the State Board of Education established kindergarten reading-readiness levels. Beginning in 1998-99, each district annually must assess reading readiness or literacy and comprehension levels of students in kindergarten or 1st and 2nd or 3rd grades. An individual literacy plan must be developed for students falling behind the literacy levels, and students cannot be passed on from 3rd- to 4th-grade reading classes if they score below the state level. In addition, districts must report the percentage of 3rd-grade students who: (1) read at or above 3rd-grade level, (2) have an individual literacy plan and (3) increase their literacy and reading levels by two or more grades during the year.

Several states are focusing on teacher quality. For example, ***Maryland's*** state superintendent has recommended increasing the number of reading courses required for prospective teachers from one to four. As part of a broad overhaul of reading policies, ***California*** will require teaching candidates to pass a new Reading Instruction Competence Assessment.

SUMMARY

State leaders can play an important role in raising students' reading competency levels and setting a foundation for success throughout students' lives. But policymakers must be well-informed about ways to influence student reading results positively and to turn around low reading scores. As state leaders reexamine existing and adopt new reading policies, they should consider what research and practice say about how children successfully learn to read. Many reading experts and educators suggest lawmakers should target their efforts to the following areas: prevention, early diagnosis of and intervention with reading problems, teacher preparation and professional development, student reading standards and accountability for reading results. Beyond establishing initial policies, state leaders will need to keep an eye on the impact of their efforts as the results roll in.

RESOURCES AND STUDIES ON READING

Listed below is a limited selection of research on reading programs and studies on the development of student reading skills. This list represents only a few of the valuable resources and studies available on reading.

Study	Description and Conclusions
Building on the Best, Learning from What Works: Seven Promising Reading and English Language Arts Programs American Federation of Teachers, 1998 AFT, 202-879-4400	•Describes seven reading and English language-arts programs for raising student achievement (especially in low-performing schools) that show evidence of high standards, effectiveness and replicability, and include support structures for the program. *Conclusions* •No conclusions were drawn.
Reading Programs for Students in the Lower Elementary Grades: What Does the Research Say? Texas Center for Educational Research (TCER), 1997 TCER, 512-467-3632	•Reviews existing research on 17 reading instruction programs targeted to the early grades, including instructional strategies and curricular content, resources needed for implementation and evidence of effects on student results. •Does not identify "the best" program, but provides a summary of research to make better decisions about reading instruction. *Conclusions* •Teachers must know and use multiple strategies in order to teach all students to read. •Reading programs should balance systematic instruction in reading skills and in-depth exposure to meaningful language. •Research should guide, but not dictate selection of reading programs.
Results-Based Practices Showcase Kentucky Department of	•Compiles programs and instructional practices with fairly consistent results, including several reading and writing programs. •Lists each practice's effectiveness, program description, teacher support,

Education (KDE), 1997-98 KDE Bookstore, 502-564-3421	equipment requirements, costs and contact for information. *Conclusions* *No conclusions were drawn.
Preventing Reading Difficulties in Young Children National Research Council (NRC), 1998 NRC, 800-624-6242 or National Academy Press, www.nap.edu/bookstore	*17-member panel of scholars studied a wide range of reading research over two years. *Conclusions* *Integrate teaching techniques that develop phonemic awareness, reading fluency and comprehension. *Learning to read cannot be accomplished through single-focused instruction methods. *Many reading problems are preventable through high-quality instruction and early exposure to language skills and rich literature. *Report called for: (1) adequate teacher preparation, including for preschool providers; (2) restructuring of teacher education; (3) money for smaller class sizes and quality instructional materials; and (4) more parental involvement.
30 Years of Research: What We Now Know About How Children Learn To Read National Institute of Child Health and Human Development (NICHD), 1997 NICHD, 301-496-9849	*Summarizes 30 years of NICHD efforts to improve quality of reading research by conducting long-term, prospective, longitudinal and multi-disciplinary research. *Conclusions* *Reading difficulties reflect a persistent deficit, rather than a developmental lag in linguistic and basic reading skills. *Phonemic awareness must be combined with explicit, systematic instruction in common sound-spelling relationships. *Recommendations include: (1) begin teaching phonemic awareness directly by kindergarten, (2) teach each sound-spelling correspondence explicitly, rather than by giving clues,(3) balance decoding instruction with use of real stories to develop comprehension.
The Reading Crisis: Why Poor Children Fall Behind Jeanne Chall, V. Jacobs and L. Baldwin, 1990	*Studied reading performance and literacy development of low-income students in grades 2 and 3 and 4-7. *Conclusions* *Even if achievement in early grades was on par with general population, scores often dipped around 4th grade. *After 3rd grade, low-income students had difficulty defining more abstract, academic and uncommon words, and need to focus on reading skills such as vocabulary development. *Strong reading programs in early grades help low-income students move successfully to intermediate grades. *Educators need to diagnose and anticipate reading difficulties and intervene as early as possible. *Students' literacy development in 4th grade and beyond is significantly influenced by degree and sophistication of stimulation in language and literacy at home.

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